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| RESEARCH AND TECHNOLOGY RESUME | | 1. GOVT ASSIGNMENT | | 2. AGENCY ASSIGNMENT | | 3. REPORT NUMBER | |
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| 62205012 HF1030801 AGJ | | GA | | A. Work Unit | | | |
| 10. PRIOR NUMBER CODE | | 62205012 HF103080104 | | | | | |
| (U) Shipboard Sonar Display | | | | | | | |
| 012800 Phys. Oceanography; 001800 ASW warfare; 000100 Acoustic detection | | | | 11. START DATE | | 12. END DATE | |
| | | | | 1263 | | 0008 | |
| 13. CONTRACT METHOD | | | | 14. CONTRACT GRANT | | 15. DATE | |
| C. In-House | | | | N/A | | | |
| 16. CONTRACT TYPE | | | | 17. AMOUNT | | | |
| 250450 | | | | 2105 | | | |
| 18. TITLE OF INVESTIGATION | | | | 19. PERFORMING ORGANIZATION | | | |
| Naval Oceanographic Office | | | | 250450 2105 | | | |
| Washington, D. C. 20390 | | | | Naval Oceanographic Office | | | |
| Randlett, W. B. 3800 | | | | Washington, D. C. 20390 | | | |
| 301-736-2700-X635 | | | | Atkocius, D. A. 3800 | | | |
| | | | | 301-736-2700-X635 | | | |
| 20. COORDINATION | | | | DN | | | |
| Information display | | | | | | | |
| Sonar; sonar equation; velocimeters; computers; plotters | | | | | | | |
| (U) Objective. Develop a shipboard system for rapidly displaying environmental data for sonar operating decision criteria. | | | | | | | |
| () Approach. Reduce the sonar equation to an easily usable form and develop procedures for its applications to both historical and in-situ environmental data. Format environmental data and computational procedures on microfilm or video tape so that it can be rapidly and simply employed aboard ship to optimize sonar utilization. Using disposable velocimeters and shipboard receiving electronics, together with a shipboard computer and plotter, develop an optimum capability for determining sonar performance from stored and real-time environmental data. Display results on video tape or other appropriate system. Problems are anticipated in computerizing the models on board ship. | | | | | | | |
| (U) Progress. Since April 1964, progress has been made in reducing the environmental data and applicable sonar equations to an easily followed and readily understandable microfilm format. Computer programs for ray path and intensity calculations are being modified. A disposable sound speed profiling device has been developed and is being field tested. | | | | | | | |
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52. (U) Future Efforts. a. Develop an interim technique, such as microfilm, for storing and displaying environmental information needed to define sonar operating criteria. b. Evolve sound intensity and ray path equations in simplest forms compatible with the range of oceanographic variables and with user requirements for accuracy and definition. c. Select or develop a combination portable computer (analog or digital) and automatic plotter of capacity sufficient to define and display required sound intensity and ray path information. d. Develop a method for providing stored and real-time oceanographic data to the computer. e. Conduct evaluation in conjunction with Fleet Sonar exercises.

53. References. H. W. Marsh, Jr., and M. Schulkin, "Report on the Status of Project AMOS (Acoustic, Meteorological, and Oceanographic Survey) 1 Jan 1953 - 31 Dec 1954."

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(U) T. G. Bell, USL Technical Memorandum 905-07-64, 905-08-64, and 905-09-64 (Confidential report).

(U) C. B. McGuinness, W. T. Hirshman, J. Stockel, "Acoustic and Geophysical Survey of Bottom and Subbottom Reflectivity, Area B," 17 Feb 1964, Alpine Geophysical Associates, Inc. Underwater Sound Advisory Group, "Requirements for Oceanographic Knowledge in Underwater Acoustics Research," Nov 1964 (Confidential report).

(U) H. O. Misc. 15359-81V, VAMP Inshore Survey Data Report, Part 1 - Acoustic Phase, Complete Sweep 11 May 1960 (Secret report).

(U) H. O. Misc. 15359-81V, VAMP Inshore Survey Data Report, Part I - Acoustic Phase, Complete Sweep 1, Jan 1962 (Secret report).

(U) VEF Report 1, "Preliminary Study of the Effect of Tidal Variations and Depth of Noise Source on Low Frequency Sound Transmission Loss," DMR 0-105-62, Aug 1962 (Confidential report).

(U) Inshore Survey Data Report (15359-82V), Acoustic Phase, Bosphorus and Dardanelles, Turkey, Nov 1962 (Secret report).

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